

FEDOROVSKAYA, R. F., starshiy nauchnyy sotrudnik; FORTUNATOV, M. N.;  
DOBROTINA, N. A., mladshiy nauchnyy sotrudnik

Some characteristics of psoriasis in children. Vest. dermat. i ven.  
no.2:28-35 '62. (MIRA 15:2)

1. Iz Gor'kovskogo nauchno-issledovatel'skogo instituta dermatologii i venerologii Ministerstva zdravookhraneniya RSFSR (dir. - kandidat meditsinskikh nauk O. D. Kochura, nauchnyy konsul'tant - zasluzhennyy deyatel' nauki prof. M. P. Batunin) i kafedry kozhno-venericheskikh bolezney Gor'kovskogo meditsinskogo instituta imeni S. M. Kirova (zav. - zasluzhennyy deyatel' nauki prof. M. P. Batunin).

(PSORIASIS)

COMMON ELEMENTS										RARE EARTH ELEMENTS										METALS										NON-METALS										GASES									
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**FORTUNATOV N.S.** **B-I-6**

**BC**

**Electrolytic refining of aluminum in the system**  
**AlCl<sub>3</sub>-NaCl.** V. A. PLOUMINOV, N. A. FORTUNATOV, and  
 N. M. GAVRILIN (Lekt. Metal., 1932, No. 7-8, 24-27;  
 Chem. Zvest., 1933, i, 3423).—The process has been  
 investigated at a bath temp. > the m.p. of Al, with  
 alloys of Al and Cu, Si, Mn, and Zn in such proportions  
 that the alloys were molten at < 800°. The cathode  
 c.d. must be < 200 amp. per sq. dm. at 2-4 volta.  
 CN. Ans. (s)

**ASS-51A METALLURGICAL LITERATURE CLASSIFICATION**

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

2

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Vapor pressure of a mixture of molten aluminum and sodium chloride. V. A. Plotnikov, N. S. Fortunatov, and V. S. Gubins. *J. Applied Chem. (U. S. S. R.)* 6, 1025-6(1933).—The following mixts. were investigated by the Wastenburg method (C. A. 7, 434): 50%  $\text{AlCl}_3$  + 50%  $\text{NaCl}$ ; 25.3%  $\text{AlCl}_3$  + 66.7%  $\text{NaCl}$ ; and 25%  $\text{AlCl}_3$  + 75%  $\text{NaCl}$ . The prepn. of the melts as well as the analytical procedure is described. The vapor tension was detd. according to  $P = (\text{no. of mols. of } \text{AlCl}_3) / (\text{no. of mols. of the gas} + \text{no. of molecules of } \text{AlCl}_3)$ , the no. of mols. being substituted by partial vols. The vapor pressure of  $\text{AlCl}_3$  vapor in a mixt. of  $\text{AlCl}_3$  +  $\text{NaCl}$  at 700° is that of a mixt. of 50 mols. %  $\text{AlCl}_3$ . A. A. H.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

GROUP #

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

CPX

4

Processes and Properties in Li

Fused salt batteries with eutectic alloy electrodes.  
V. A. Potomkin, N. S. Fortunatov and E. Gorenberg.  
*Mém. Inst. Chim. Acad. Sci. U.S.S.R.* 1, 29-33;  
*J. Gen. Chem. (U.S.S.R.)* 4, 1000-1001 (1934).—Voltaic  
cells using metals or alloys and fused salts were made up  
as follows: Cd/CdCl<sub>2</sub> or CdSO<sub>4</sub>/alloy of Bi, Sn, Pb;  
Al/AlCl<sub>3</sub>, NaCl/Cu; Bi/CdCl<sub>2</sub>/Cd; and Zn/ZnSO<sub>4</sub>/Cu  
(at 110°). After a short operation at low temp. the  
e. m. f. of the first 3 cells falls to zero, and it is found that  
a eutectic alloy has deposited on the colder metal. On  
warming at temp. above the m. p. of the eutectic alloy,  
the e. m. f. also falls at first but does not reach zero because  
of the melting away of the eutectic film. P. H. Rathmann

ASD 14 A METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDER										PROCESS AND PROPERTIES INDEX										3RD AND 4TH ORDER									
<p><i>m</i></p> <p><i>7</i></p> <p><b>*Fused Salt Batteries with Eutectic Alloy Electrodes.</b> V. A. Plotnikov, N. S. Fortunatov, and N. N. Gratsianskii (<i>Zapiski Institutu Khimii, Ukrain'ska Akademii Nauk (Mem. Inst. Chem., Ukrain. Acad. Sci.)</i>, 1934, <b>4</b>, 1089-1101; <i>C. Aba.</i>, 1935, <b>20</b>, 2095).—[In Ukrainian.] Voltaic cells using metals or alloys and fused salts were made up as follows: Cd   CdCl<sub>2</sub> or CdSO<sub>4</sub>   alloy of bismuth, tin, lead; Al   AlCl<sub>3</sub>, NaCl   Cu; Bi   CdCl<sub>2</sub>   Cd; and Zn   ZnSO<sub>4</sub>   Cu (at 100°C.). After a short operation at low temperature, the e.m.f. of the first 3 cells decreases to zero, and it is found that a eutectic alloy has deposited on the nobler metal. On working at temperatures above the melting point of the eutectic alloy, the e.m.f. also decreases at first, but does not reach zero because of the melting away of the eutectic film.—S. U.</p>																													
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1ST AND 2ND CRITERIA

PROCESS AND PROPERTIES DATA

CP

4

Decomposition potential of aluminum chloride amines  
A. A. Potnukov and N. S. Fortunatov. *Mosc. Inst. Chem. Technol. Acad. Sci.* 2, 231 (1935). N<sub>2</sub> is evolved, in accordance with Faraday's law, at a Pt anode from a molten mixt. of AlCl<sub>3</sub> amines. The decompn. potentials vary with temp. and c. d. B. C. A.

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PROCESS AND PROPERTIES DATA

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

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A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

1ST AND 2ND CRITERIA

PROCESS AND PROPERTIES DATA

CP

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Electrolysis of aluminosilicates. N. S. Fortunatov.  
Mem. Inst. Chem. Ukrain. Acad. Sci. 2, 257-9(1935).  
--Electrolysis of molten 1:2:12 SiO<sub>2</sub>-Al<sub>2</sub>O<sub>3</sub>-NaHCO<sub>3</sub>  
leads to deposition of Si at the cathode. Al is not de-  
posited before most of the Si has been eliminated.  
B. C. A.

ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND QUARTERS										3RD AND 4TH QUARTERS									
PROCESSES AND PROPERTIES INDEX																			
<p><i>BC</i></p> <p><i>A-1</i></p> <p><b>Dissolution of elements in molten <math>\text{AlCl}_3\text{-NaCl}</math>.</b>  <b>V. A. FORTUNOV and N. S. FORTUNATOV (Mem. Inst. Chem. USSR, Acad. Sci., 1966, 3, 123-128).—</b>  <b>The solubility of Fe, P, Mn, W, Mo, Cu, Si, and S in molten 1:1 <math>\text{AlCl}_3\text{-NaCl}</math> has been measured at 150–370°. Except in the case of S, chemical reaction does not take place between the solutes and the solvent.</b>  <b>R. T.</b></p>																			
<p>ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION</p> <p>12000 12100 12200 12300 12400 12500 12600 12700 12800 12900</p> <p>13000 13100 13200 13300 13400 13500 13600 13700 13800 13900</p> <p>14000 14100 14200 14300 14400 14500 14600 14700 14800 14900</p> <p>15000 15100 15200 15300 15400 15500 15600 15700 15800 15900</p> <p>16000 16100 16200 16300 16400 16500 16600 16700 16800 16900</p> <p>17000 17100 17200 17300 17400 17500 17600 17700 17800 17900</p> <p>18000 18100 18200 18300 18400 18500 18600 18700 18800 18900</p> <p>19000 19100 19200 19300 19400 19500 19600 19700 19800 19900</p>																			



1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
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<p>BC</p> <p>13-I-5</p> <p>Oxidation of molten pig iron by pure oxygen.  N. S. PORCHAYOV and K. S. MINOSCHENKOV  (Moscow Inst. Chem. Ukrain Acad. Sci., 1937, 4, 20—  60).—Fused pig Fe is oxidized rapidly but quietly  (without expansion or spitting) by pure O<sub>2</sub>. In pre-  sence of SiO<sub>2</sub>, the oxidation of C is hindered by re-  moval of FeO as silicate. F. J. G.</p>																			
<p>ASB-51A METALLURGICAL LITERATURE CLASSIFICATION</p>																			
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Potential measurements under conditions preventing diffusion in the formation of alloys. N. S. Formisov and V. I. Mikhailovskaya. *Mem. Inst. Chem., Latvian Acad. Sci.* 4, 41-7 (1937); *Chem. Zentr.* 1938, II, 2485 G.

—By use of the cell  $Al|AlBr_3 + KBr|Cu$ , a method was developed for measuring the potential of the cell in the formation of alloys in salt melts. The method is based on the principle that a sufficiently great resistance is placed in the external circuit so that the process of alloy formation proceeds while the retarding action of diffusion is prevented. In this way it can be demonstrated that the e. m. f. not only decreases but may even increase, depending upon which region of the phase diagram of the given system corresponds to the alloy formation.

M. G. Moore

1ST AND 2ND DEPT'S										3RD AND 4TH DEPT'S									
PROCESSES AND PROPERTIES INDEX																			
<p><b>C</b></p> <p>Tube for introduction of oxygen into liquid metal. N. S. Karginov and E. B. Gikman. Russ. 64,111, Nov. 30, 1960. The outer refractory cover of the tube consists of a mass of magnesite, alumina and C.</p>																			
<p>ASB-SEA METALLURGICAL LITERATURE CLASSIFICATION</p>																			
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<p>Apparatus for electrolytic refining of aluminum. V. I. Mikhailovskaya and N. S. Bartomarov. Russ. 50,440, Jan. 31, 1940. To prevent mixing of the anodic with the cathodic metal and to maintain a uniform distance between them the cathode and anode are sepd. by porous diaphragms of metal oxides which are not reduced by Al at the temp. of the electrolysis.</p>																																																			
<p>ASB-31A METALLURGICAL LITERATURE CLASSIFICATION</p>																																																			
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PROCESSES AND PROPERTIES INDEX

Determination of the oxidation velocity constants for molten iron oxidized with pure oxygen. N. S. Fortunatov and V. I. Mikhailovskaya. *Mem. Inst. Chem. Acad. Sci. USSR*, S. S. R. 6, No. 2, 83-91 (in Russian 92, in English 92) (1940).—The process of oxidation was studied by passing a stream of pure  $O_2$  against the surface of molten Fe of different temps. at rates so as not to cool the metal surface. The  $O_2$  is absorbed and diffuses through the oxide layer. The oxide layer does not impede the absorption

at temps. above  $1700^\circ$ . From  $1565^\circ$  to  $1650^\circ K \times 10^4$  increased from 6.78 to 29.71, whereas from  $1700^\circ$  to  $1750^\circ K \times 10^4$  increased from 274 to 394. B. Z. K.

ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION

Chemical Abst.  
Vol. 48 No. 5  
May 10, 1954  
Electrochemistry

Anodic solution potentials of metal sulfides. N. S. Fortunatov and V. I. Bilkuvalovskaya. *Ukrain. Khim. Zhur.* 16, 807-81 (1951) (in Russian).—Artificial pure sulfides of Fe, Ni, Co, Cu, Sn, Pb, Sb, Mo, and Ag were subjected to anodic soln. in a satd. NaCl soln. at 20 and 60°. The results are given in diagram and tabular form. A diagram of the elec. circuit is given. The potentials with and without electrolysis were measured at different c.d.s. against a silver electrode. For comparison, the potentials of the elemental metals were detd. Wherever possible, electrolysis was continued up to the evolution of Cl<sub>2</sub>. In all cases elemental S was produced. The potentials of the metals and corresponding sulfides at 20° without electrolysis were: Fe, -0.540, -0.019; Ni, -0.328, -0.330; Co, -0.330, +0.248; Cu, -0.174, +0.234; Sn, -0.460, -0.460; Pb, -0.600, -0.510; Sb, -0.300, -0.134; Bi, -0.214, -0.160; MoS<sub>3</sub>, +0.100; Ag<sub>2</sub>S, -0.030. The use of NaCl as a medium was preferred to sulfates because the chlorides of most metals were sol. The conclusion of Ustinski and Chizhikov (*C.A.* 44, 3816) that the potential depended on time was obviously erroneous. Sulfide anodes were covered by a hard layer of S which acted as an elec. diaphragm. I. R.

FORTUNATOV, N. S.

Chemical Abst  
Vol. 48 No. 9  
May 10, 1954  
General and Physical Chemistry

The theory of activity. N. S. Fortunatov and Yu. P. Nararenko. *Ukrain. Khim. Zhurn.* 18, 436-4 (1953). The concept of activity and activity coeffs. is critically discussed. The fundamental idea behind this theory of solns. is in error in that it assumes the reality of ideal gas laws. Particular examples are cited in which concd. electrolyte solns. display activity greater than unity. The theory of solns. should be based on known interactions between solvent and solute mols.  
G. M. Kosolapoff

(2)  
Chem

9-2-54  
gjk

FORTUNATOV, N. S.

FORTUNATOV, N.S.; NAZARENKO, Yu.P.

Answer to the article of N.A.Ismailov, A.M.Shkodin, and  
V.V.Aleksandrov "Discussion of the activity method in  
thermodynamics of real systems." Ukr.khim.shur. 19 no.6:  
697-699 '53. (MIRA 8:5)

1. Institut obshchey i neorganicheskoy khimii Akademii  
nauk USSR.

(Thermochemistry) (Ismailov, N.A.) (Shkodin, A.M.)  
(Aleksandrov, V.V.)



FORTUNATOV N.S.

4

✓ Separation of a small quantity of cobalt from solutions.  
N. S. Fortunatov, Yu. P. Nazarenko, and V. I. Mikhailov. *C/*  
*Skayn. Zhur. Obshchei Khim.* 25, 656-62(1953).—From

a sulfate soln. contg. 110 g. of Zn, 1.25 g. Mn, and 5 mg. Co per l., Co and Mn were pptd. in the presence of oxidizing agents such as  $\text{KMnO}_4$ ,  $\text{KClO}_4$ , or  $\text{K}_2\text{S}_2\text{O}_8$ , with ZnO. Complete pptn. of Co depends on the excess of oxidizing agents and the complete pptn. of Mn. Ten ml. of the soln. treated with ZnO and an excess of the oxidizing agent, and heated at  $70^\circ$  on the water bath for 80 min. yielded 99% of the Co in the ppt. Completeness of pptn. was verified by means of radioactive  $\text{Co}^{60}$ . Also in *J. Gen. Chem.* U.S.S.R. 25, 620(1955)(Engl. translation).

N. Charmandarian

BZ

Inst. Gen. + Inorg. Chem., AS USSR

*Handwritten:* 7  
Separation of cobalt and nickel  
 V. I. Mikhailovskaya, and N. S. Fortunatov.  
 Khim. Zhur. 22, 636-41 (1956) (in Russian).—Add alum to a  
 soln. contg.  $\text{Ni}^{++}$  and  $\text{Co}^{++}$  and bring to pH 5 with  $\text{Na}_2\text{CO}_3$ .  
 Pass in  $\text{Cl}_2$  with stirring at over  $70^\circ$ . After 1 hr., filter  
 off and wash the pptd.  $\text{Co}$  and  $\text{Al}$  compds. (I). Bring filtrate  
 to pH 8 ( $\text{Na}_2\text{CO}_3$ ), chlorinate again, filter (II), and ppt.  
 $\text{NiCO}_3$  from the filtrate. Treat I with  $\text{SO}_4$  at pH 5, filter  
 II, and ppt.  $\text{CoCO}_3$  from the filtrate.  $\text{CuSO}_4$  can be  
 used in place of alum to form the metal hydroxide buffer  
 useful in cleanly sepg. the  $\text{Co}$  and  $\text{Ni}$ . In continuous processes  
 the alum or  $\text{CuSO}_4$  can be largely or completely replaced  
 by the ppts. at points II of the process. J. H. S.

*Handwritten:* ffr.

*Handwritten:* pB rrr

*Handwritten:* Inst. Gen. & Inorg. Chem., A.S. USSR

KUL'SKIY, L.A.; SHEVCHENKO, M.A.; FORTUNATOV, M.S., kand.khim.nauk,  
otv.red.; POKROVSKAYA, Z.S., ~~red.izd-va~~; YEFIMOVA, M.I., tekhn.red.

[Improving the quality of natural waters by the oxidation method;  
information reports] Okislitel'nyi metod uluchsheniia kachestva  
prirodnykh vod; informatsionnoe soobshchenie. Kiev, Izd-vo Akad.  
nauk USSR, 1958. 31 p. (MIRA 12:5)  
(Water--Ozonization)

18(5)

PHASE I BOOK EXPLOITATION

SOV/2511

Fortunatov, Nikolay Sergeyevich

Kompleksnaya pererabotka sul'fidnykh rud /kontsentratov/ (Exhaustive Treatment of Sulfide Ores /Concentrates/) Kiev, AN Ukrainskoy SSR, 1959. 182 p. 3,000 copies printed.

Sponsoring Agency: Akademiya nauk Ukrainskoy SSR. Institut obshchey i neorganicheskoy khimii.

Resp. Ed.: Ya. A. Fialkov, Corresponding Member, UkrSSR Academy of Sciences;  
Ed. of Publishing House: V. L. Shkurko; Tech. Ed.: V. I. Yurchishin.

PURPOSE: This book is intended for specialists and students in the field of nonferrous metallurgy.

COVERAGE: The book describes the theoretical basis of a new method for the exhaustive treatment of complex sulfide ores and gives experimental data on the development of the flow sheet. Various applications of the new method for extraction of all valuable ore components are discussed. The

Card 1/4

Treatment of Sulfide Ores (Cont.)

SOV/2511

method, which requires only such reagents as can be salvaged for re-use, was developed at the Institute of General and Inorganic Chemistry, USSR Academy of Sciences, in order to exploit nonferrous ore deposits in Central and Eastern Siberia where plentiful cheap hydroelectric power is expected to be available in the near future. The hydrometallurgical character of the method makes possible the extraction of all valuable components including rare metals and trace associates. The following personalities assisted the author in writing the book: N. V. Aksel'rud, V. I. Mikhaylovskaya, Yu. P. Nazarenko, M. V. Artemenko, Z. A. Fokina, I. G. Pavlenko, N. N. Zakharova, N. A. Mikhatskaya, and K. F. Slesarenko. Y. A. Fialkov, Corresponding Member, Ukrainian Academy of Sciences, reviewed the manuscript. There are short bibliographies at the end of each chapter.

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Treatment of Sulfide Ores (Cont.)

SOV/2511

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Treatment of Sulfide Ores (Cont.)	SOV/2511
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AVAILABLE: Library of Congress	

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GO/mg  
10-22-59

KUL'SKIY, Leonid Adol'fovich, prof.; FORTUNATOV, N.S., doktor tekhn.nauk, retsenzent; SHEVCHENKO, M.A., kand. khim. nauk, otv. red.; SLIPCHENKO, V.A., nauchnyy red.; RAKHLINA, N.P., tekhn. red.

[Principles of the technology of water conditioning; processes and apparatus] Osnovy tekhnologii konditsionirovaniya vody; protsessy i apparaty. Kiev, Izd-vo Akad.nauk USSR, 1963. 452 p. (MIRA 16:7)

1. Chlen-korrespondent AN Ukr.SSR (for Kul'skiy).  
(Water--Purification)



S/073/63/029/001/003/009  
A057/A126

AUTHORS: Fortunatov, N.S., Fokina, Z.A.

TITLE: The solubility of gallium, indium, and thallium chloride in sulfur monochloride

PERIODICAL: Ukrainskiy khimicheskiy zhurnal, v. 29, no. 1, 1963, 16 - 20

TEXT: N.S. Fortunatov published in an earlier work [Kompleksnaya pererabotka sul'fidnykh rud (Complex reprocessing of sulfidic ores), Ed. AS UkrSSR, 1959] a method for the digestion of sulfidic polymetallic ores by chlorination with dry chlorine gas in sulfur monochlorides ( $S_2Cl_2$ ). The present paper deals with investigations of the behavior of Ga, In, and Tl chlorides under such conditions. Quantitative data of the solubility of these chlorides in  $S_2Cl_2$  or  $S_2Cl_2$ , respectively, with excess chlorine gas at 20 to 120 C were obtained and also results on distillation of the chlorides with  $S_2Cl_2$ . Complex-formation in these systems will be studied in future investigations. The solubility was measured in a thermostated cylinder with a stirrer at 20, 40, 60, 80, and 120 C by determining Ga as oxide, and In and Tl polarographically. The analysis of liquid equi-

Card 1/2

S/073/63/029/003/009/009  
A057/A126

AUTHORS: Fortunatov, N. S., Slobtsov, L. Ye.

TITLE: Investigation of the countercurrent coprecipitation of indium with  
difficultly soluble compounds of heavy metals

PERIODICAL: Ukrainskiy khimicheskiy zhurnal, v. 29, no. 3, 1963, 339 - 342

TEXT: The countercurrent method for the separation of metals is suggested by the MOHX AH YCCP (IONKh AS UkrSSR) and developed by the present authors. The method can be employed successfully for the separation of metals from sulfuric acid extracts of dust and distillates in copper mills. The present paper deals with the behaviour of indium in countercurrent coprecipitation with hydroxydes, carbonates, and phosphates of iron, copper, and zinc. The method of stepwise ion exchange was used - the initial solution was divided into several portions corresponding to the number of exchange steps; to the first portion there was added the quantity of precipitant sufficient for the precipitation of all metals in the initial solution; the precipitate was then separated (centrifuged) and subsequently treated with all following portions of the initial solu-

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Investigation of the...

S/073/63/029/003/009/009  
A057/A126

tion; then the precipitate of the second portion of solution was precipitated and treated subsequently with the next following; these operations were repeated to the precipitation of the precipitate in the last portion of the solution. The initial solutions were prepared from pure iron, indium, copper, and zinc sulfate and the precipitations carried out with solutions of sodium hydroxide, or carbonate and trisodiumphosphate. Indium was determined by spectral analysis, copper iodometrically, zinc and iron by titration. The experiments demonstrated a considerable concentration of indium by countercurrent coprecipitation. Ion exchange occurs already after 2 - 3 steps. Indium precipitates after iron and before copper and zinc. The separation effect of the countercurrent coprecipitation method is improved using as precipitation agents carbonates and phosphates of alkali metals. There are 5 tables.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii AN USSR (Institute of General and Inorganic Chemistry of the AS UkrSSR)

SUBMITTED: February 1, 1962

Card 2/2

FORTUNATOV, N.S.; SLOBTSOV, L.Ye.; LEONT'YEVA, I.A.

Countercurrent precipitation of copper germanate. Ukr. khim.  
zhur. 29 no.8:864-868 '63. (MIRA 16:11)

1. Ural'skiy nauchno-issledovatel'skiy i proyektnyy institut  
mednoy promyshlennosti i Institut obshchey i neorganicheskoy  
khimii AN UkrSSR.

FORTUNATOV, N.S.; SLOBTSOV, L.Ye.

Countercurrent coprecipitation of germanium with slightly soluble compounds of heavy metals. Ukr. khim. zhur. 29 no.11:1223-1228 '63. (MIRA 16:12)

1. Ural'skiy nauchno-issledovatel'skiy i proyektnyy institut mednoy promyshlennosti i Institut obshchey i neorganicheskoy khimii AN UkrSSR.

FORTUNATOV, N.S.; KUBLANOVSKIY, V.S.

Physicochemical study of the system antimony trichloride - sulfur chloride. Ukr.khim.zhur. 30 no.5:436-441 '64.

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR. (MIRA 18:4)

FORTUNATOV, N.S.; VARTAPETOVA, N.Ye.

Distribution of elements between the precipitate and solution  
depending on the conditions of precipitation. Ukr. khim. zhur.  
30 no.6:589-593 '64. (MIRA 18:5)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR i Vin-  
nitskiy meditsinskiy institut.

FORTUNATOV, N.S.; FOKINA, Z.A.

Reaction of sulfur chloride with tin bichloride and lead tetra-  
chloride. Ukr. khim. zhur. 30 no.8:780-784 '64.

(MIRA 17:11)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.



FORTUNATOV, N.S. [Fortunatov, M.S.]; VARTAPETOVA, N.Ye. [Vartapetova, N.O.]

Study of the precipitation and adsorption series of cations  
on various carriers and adsorbents. Dop. AN URSR no.8:  
1088-1091 '64. (MIRA 17:8)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR i  
Vinnitskiy meditsinskiy institut. Predstavleno akademikom  
AN UkrSSR F.D. Ovcharenko.

FORTUNATOV, R.S.; SLOBTSOV, L. Ye.

ionic state of germanium in a medium containing anions of  
perchloric, sulfuric, and phosphoric acids. Ukr. khim. zhur.  
30 no.12:1279-1283 '64 (MIRA 18:2)

1. Ural'skiy nauchno-issledovatel'skiy i proyektnyy institut  
melnoy promyshlennosti i Institut obshchey i neorganicheskoy  
khimii AN UkrSSR.

FORTUNATOV, N.S.; FOKINA, Z.A.; KOPA, M.V.; BIRYUK, L.I.

Interaction of tetrachlorides of elements of group IV with sulfur  
monochloride. Ukr.khim.zhur. 31 no.2:148-153 '65.

(MIRA 18:4)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.

FORTUNATOV, N.S.; SLOBTSOV, L.Ye.

Zinc germanates. Ukr. khim. zhur. 31 no.6:637-638 '65. (MIRA 18:7)

1. Ural'skiy nauchno-issledovatel'skiy i proyektnyy institut mednoy promyshlennosti i Institut obshchey i neorganicheskoy khimii AN UkrSSR.

L 5380-66 EWT(m)/EPF(c)/EPF(n)-2/EMP(t)/EMP(h) LJP(c) JD/JG

ACC NR: AP5026582

SOURCE CODE: UR/0073/65/031/010/1078/1079

AUTHOR: Fortunatov, N.S.; Timoshchenko, N.I.

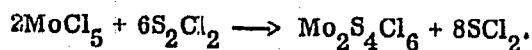
ORG: Institute of General and Inorganic Chemistry AN UkrSSR (Institut obshchey i neorganicheskoy khimii AN UkrSSR)

TITLE: A new molybdenum thiochloride

SOURCE: Ukrainskiy khimicheskiy zhurnal, v. 31, no. 10, 1965, 1078-1079

TOPIC TAGS: molybdenum compound, sulfur compound, chlorine compound

ABSTRACT: Molybdenum pentachloride was heated for 4 — 6 hr with a 10-fold excess of sulfur chloride to 250C in a sealed glass tube which served as a reflux condenser. The product obtained was a yellowish-brown powder insoluble in alcohol, benzene, chloroform, and carbon tetrachloride. Chemical analysis, performed by dissolving in alkali in the presence of H<sub>2</sub>O<sub>2</sub>, showed that the empirical formula is MoS<sub>2</sub>Cl<sub>3</sub>. Assuming that the molybdenum pentachloride molecule is a dimer, the compound obtained may be represented as Mo<sub>2</sub>S<sub>4</sub>Cl<sub>6</sub>. It is proposed that the reaction between sulfur chloride and molybdenum pentachloride occurs as follows:



SUB CODE: IC / SUBM DATE: 21Jul64 / ORIG REF: 001 / OTH REF: 001

Card 1/1

UDC 546.77

FORTUNATOV, N.S.; TIMOSHCHENKO, N.I.

New molybdenum thiochloride. Ukr. khim. zhur. 31 no.10:1078-1079  
'65. (MIRA 19:1)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR. Submitted  
July 21, 1964.

L 42724-66 EWT(6)/EWT(1)/ETI IJP(3) JE

ACC NR: AP6029838

SOURCE CODE: UR/0073/66/032/008/0900/0901

AUTHOR: Fortunatov, N. S.; Kublanovskiy, V. S.; Timoshchenko, N. I.; Fokina, Z. A.

ORG: Institute of General and Inorganic Chemistry, AN UkrSSR (Institut obshchey i neorganicheskoy khimii AN UkrSSR)

33  
B

TITLE: Chlorination in sulfur chloride medium with help of ultraviolet irradiation

SOURCE: Ukrainskiy khimicheskiy zhurnal, v. 32, no. 8, 1966, 900-901

TOPIC TAGS: chlorination, metal extracting, ultraviolet irradiation, sulfur chloride, pyrite, sphalerite, molybdenum oxide, vanadium pentoxide

ABSTRACT: A series of experiments were described in which ultraviolet irradiation was applied in low-temperature chlorination of sulfidic and oxidic ores for the purpose of intensification of the process. Earlier, extraction of iron and zinc from polymetallic sulfidic ores was found to be only 65—75% complete when conventional, low-temperature chlorination in sulfur chloride medium was applied. Experimental chlorination of pyrite, sphalerite, vanadium pentoxide ( $V_2O_5$ ), and molybdenum trioxide ( $MoO_3$ ) was carried out at 137C in a quartz tube irradiated by a PRK-2 lamp or without irradiation. Chemical separation of the chlorination products was described for each material. The percentage of material chlorinated with and without irradiation was: in the case of pyrite and sphalerite—78% versus 46% in 30 min; in the case of  $V_2O_5$ —100 versus about 60% in 60 min; and in the case of  $MoO_3$ —80 versus

Card 1/2

UDC: 66.542.944.03

L 42824-66

ACC NR: AP6029838

about 20% in 20 min. A leveling of the yield at 80% was observed in case of  $\text{MoO}_3$  chlorination because of substitution of sulfur for oxygen in the first stage of the process. In all cases irradiation significantly increased the chlorination rate, as shown by the respective positions of chlorination curves with and without irradiation. Orig. art. has: 2 figures. [JK]

SUB CODE: 11/ SUBM DATE: 23Mar65/ ORIG REF: 003/ATD PRESS: 5066

Card 2/2



85415

S/190/60/002/011/011/027  
B004/B060

15.8109

AUTHORS: Losev, I. P., Smirnova, O. V., Fortunatov, O. G.,  
Neklyudov, A. D.

TITLE: Study of Interfacial Polyesterification

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 11,  
pp. 1659 - 1664

TEXT: The authors report on their experiments on interfacial formation of polyesters and on data found concerning the dependence of the properties of polymers obtained on the components applied, as well as concerning the effect of reaction conditions. Polyesters were synthesized at a 1:1 ratio of the components to one another, a concentration of 0.05 mole/l, 20°C, reaction time 30 min, and rpm of the stirrer 1200 r/min. The components used were bivalent alcohols (phenols) and dicarboxylic acids. Results are given in Table 1; ✓

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85415

Study of Interfacial Polyesterification

S/190/60/002/011/011/027  
B004/B060

Table 1

glycol	acid chloride	polyester soluble in:	melting point, °C	film
$\text{HO}-(\text{CH}_2)_2-\text{OH}$	$\text{ClOC}-\text{C}_6\text{H}_4-\text{COCl}$	cresol, dimethyl formamide	215	stable, transparent
$\text{HO}-(\text{CH}_2)_4-\text{OH}$	$\text{ClOC}-(\text{CH}_2)_8-\text{COCl}$	acetone, toluene, methylene chlo- ride	82-83	little stable
dto.	$\text{ClOC}-(\text{CH}_2)_4-\text{COCl}$	dto.	65-66	dto.
$m\text{-C}_6\text{H}_4(\text{OH})_2$	$\text{ClOC}-\text{C}_6\text{H}_4-\text{COCl}$	cresol	not melting	...
dto.	$\text{ClOC}-(\text{CH}_2)_8-\text{COCl}$	acetone, toluene, methylene di- chloride	118-120	little stable
dto.	$\text{ClOC}-(\text{CH}_2)_4-\text{COCl}$	dto.	98-100	dto.
$\text{HO}-\text{C}_6\text{H}_4-\overset{\text{CH}_3}{\underset{\text{CH}_2-\text{CH}_3}{\text{C}}}-\text{C}_6\text{H}_4-\text{OH}$	$\text{ClOC}-\text{C}_6\text{H}_4-\text{COCl}$	cresol, dimethyl formamide	340-345	stable film

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85415

Study of Interfacial Polyesterification

S/190/60/002/011/011/027  
B004/B060

Continuation of Table 1

glycol	acid chloride	polyester soluble in:	melting point, °C	film
dto.	$\text{ClOC}-(\text{CH}_2)_8-\text{COCl}$	acetone, toluene	-	rubber-like
dto.	$\text{ClOC}-(\text{CH}_2)_4-\text{COCl}$	dto.	-	dto.
$\text{HO}-\text{C}_6\text{H}_4-\text{C}(\text{C}_6\text{H}_{11})_2-\text{C}_6\text{H}_4-\text{OH}$	$\text{ClOC}-\text{C}_6\text{H}_4-\text{COCl}$	cresol	not melting	-
dto.	$\text{ClOC}-(\text{CH}_2)_8-\text{COCl}$	acetone, toluene methylene chlo- ride	148-150	stable, trans- parent film
dto.	$\text{ClOC}-(\text{CH}_2)_4-\text{COCl}$	acetone, toluene	94-96	very solid, transparent
$\text{HO}-\text{C}_6\text{H}_4-\text{C}(\text{CH}_3)_2-\text{C}_6\text{H}_4-\text{OH}$	$\text{ClOC}-\text{C}_6\text{H}_4-\text{COCl}$	cresol	339-340	stable film

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Study of Interfacial Polyesterification

85415

S/190/60/002/011/011/027

B004/B060

Continuation of Table 1

glycol	acid chloride	polyester soluble in:	melting point, °C	film
dto.	$\text{ClOC}-(\text{CH}_2)_8-\text{COCl}$	acetone, toluene	-	rubber-like
dto.	$\text{ClOC}-(\text{CH}_2)_4-\text{COCl}$	dto.	-	dto.

Polyesters from 4,4'-dihydroxy diphenyl methyl ethyl methane and adipic chloride or sebacic chloride yield stable transparent films with good adhesion to glass and metal. Aliphatic glycols exhibited a low reactivity and gave poor yields. Copolymerization of 4,4'-dihydroxy diphenyl-1,1-cyclohexane with adipic chloride (AC) and terephthalic chloride (TPC) under the same conditions as before, gave the following results:

Table 2

TPC:AC	melting point	solubility	TPC:AC	melting point	solubility
100:0	not melting	insoluble	60:40	164-166	in m-cresol, di- methyl formamide
90:10	276-278	in m-cresol	50:50	138-140	in dimethyl for- mamide, m-cresol
80:20	238-240	dto.			
70:30	185-190	dto.			

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## Study of Interfacial Polyesterification

S/190/60/002/011/011/027  
B004/B060

Continuation of Table 2

TPC:AC	melting point	solubility	TPC:AC	melting point	solubility
40:60	140-142	in dimethyl formamide, m-cresol	20:80	108-110	dimethyl formamide, cresol, toluene, acetone
30:70	118-122	dto.	10:90	98-102	dto.

With rising TPC content the ability to form films is reduced to diminished solubility. The effect of the concentration of the components, their initial ratio, temperature, alkali added, reaction time, upon the intrinsic viscosity (determined by an Ostwald-Pinkevich viscosimeter) and yield was examined by the example of 4,4'-dihydroxy diphenyl-2,2-propane (Dian) and TPC. The results are as follows: 1) The reaction proceeds most readily with Dian excess. Increase of concentration of components increases viscosity and yield. 2) The optimum initial component concentration is 0.11 mole/l for viscosity, 0.13 mole/l for yield. 3) This difference of the maxima of 0.02 mole/l is eliminated, if NaOH is added with an excess of 0.5 mole per mole of Dian. Viscosity and yield then attain a maximum at

Card 5/6

Study of Interfacial Polyesterification

S/190/60/002/011/011/027  
B004/B060

0.11 mole/l. 4) Viscosity and yield drop with rising NaOH concentration, as NaOH enters into reaction with the acid chloride. 5) Optimum temperature is 18-20°C. 6) Optimum reaction time is 25 min for maximum viscosity, while the maximum yield is already attained after 15 min. There are 2 figures, 2 tables, and 5 references; 3 Soviet, 2 US, and 1 British.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskii institut im.  
D. I. Mendeleyeva (Moscow Institute of Chemical Technology  
imeni D. I. Mendeleyev)

SUBMITTED: May 6, 1960

Card 6/6

FEDOTOVA, O.Ya.; LOSEV, I.P.; KERBER, M.L.; FORTUNATOV, O.G.

Production of aliphatic-aromatic polyamides by nonequilibrium  
polycondensation reaction. Zhur. VKHO 5 no.1:111-112 '60.

(MIRA 14:4)

1. Khimiko-tekhnologicheskiiy institut imeni D.I.Mendeleeva.  
(Amides)

L 27328-66 EWT(m)/EWP(j)/T IJP(c) RM

ACC NR: AP6008984

(A)

SOURCE CODE: UR/0190/65/007/011/1989/1992

AUTHORS: Smirnova, O. V.; Fortunatov, O. G.; Garbar, N. M.; Kolesnikov, G. S. 37

ORG: Moscow Institute of Chemical Technology im. D. I. Mendeleev (Moskovskiy khimiko-tekhnologicheskii institut) 13

TITLE: Synthesis and investigation of polycarbonates<sup>1</sup> prepared by interphase polycondensation of di-(4-hydroxyphenyl)-phenylmethane

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 11, 1965, 1989-1992

TOPIC TAGS: polymer, polycarbonate plastic, polymer chemistry, polymerization, sodium hydroxide

ABSTRACT: This investigation was undertaken to extend the work of H. Schnell (Industr. and Engng. Chem., 51, 157, 1959) on the synthesis of polycarbonates. The reaction of di-(4-oxyphenyl)phenylmethane with phosgene was investigated. The conditions for maximum yield of product and the effect of NaOH concentration and the initial concentration of reactants on the yield and on specific viscosity were determined. The experimental results are presented graphically and are in good agreement with those obtained by El' Said Ali Khasan (Dissertatsiya, 1964) for the synthesis of polycarbonates from methyl- or chloro-substituted diphenyls. Orig. art. has: 3 graphs.

SUB CODE: 07, 11/SUBM DATE: 31Dec64/ ORIG REF: 002/ OTH REF: 001 2

Card 1/1 50

UDC: 541.64+678.574



FORTUNATOV, S. P.

Pharmacopoeias

History of the compilation of the first Russian pharmacopoeias. Apt. delo no. 3, 1952.

Monthly List of Russian Accessions, Library of Congress, November 1952.  
UNCLASSIFIED.

FORTUNATOV, S.P., provizor (Pyatigorsk).

Data on the history of the first pharmacopoeias; second report. *Ant.delo*  
2 no.3:42-47 My-Je '53.

(MLRA 6:6)  
(Pharmacopoeias)

FORTUNATOV, S.P. (Pyatigorsk).

Study and use of Russian medicinal plants in the 18th century  
(third report: Data on the history of first Russian pharmacopoeias).  
Apt.delo 3 no.1:44-50 Ja-I '54. (MLRA 7:1)  
(Botany, Medical)

FORTUNATOV, S. P.

"The Original Character of 18th Century Russian Pharmacopoeias." Cand Pharm Sci, Moscow Pharmaceutical Inst, Min Health USSR, Pyatigorsk-Moscow, 1955. (KL, No 18, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16).

FORTUNATOV, S.P., Kandidat farmatsevticheskikh nauk (Pyatigorsk)

Russian Pharmacopoeia of 1866. Apt.delo 6 no.1:53-58 Ja-F '57.  
(PHARMACOPOEIAS--HISTORY) (MIRA 10:3)

STYSHNOV, A.I. (s.Mrakovo Bashkirskoy ASSR); FORTUNATOV, S.P. (g.Pyatigorsk)  
MOLDAVER, T.I. (g.Berdsk); VOLKOV, V.; TRUSEV, L.G.

Letters from readers. Khim. v shkole 12 no.2:72-74 Mr-Apr '57.

(MIRA 10:3)

1. Prepodavatel' khimii 112-y shkoly rabochey molodezhi (for Volkov)
  2. Uchitel' khimii Bytoshskoy sredney shkoly Dyat'kovskogo rayona  
Bryanskoy oblasti (for Trusev)
- (Chemistry--Study and teaching)

COUNTRY : USSR  
 CATEGORY : Forestry. Forest Cultures.

X

ABS. JOUR: Ref Zhur-Biologiya, No. 5, 1959, No. 20168

Author : Fortunatov, V.; Sadasheva, G.; Gamayunov, V.; \*  
 INST. : Ufimsk Leskhoz  
 TITLE : An Experiment Made by Ufimsk Leskhoz for  
 Afforestation of Mountain Slopes.

ORIG. PUB.: S. kh. Bashkirii, 1957, No.11, 29-31

ABSTRACT : The mountains of Ufimsk Leskhoz were formerly covered with a broadleaf wood containing a large participation of oak. On soils overlying marble and limestones, containing a humus layer up to 10-50 cm deep, one began in 1950 to plant forest cultures using various mixtures on the deforested slopes. The main species used were pine, larch, oak, spruce, ash and poplar. It is pointed out that when the root collars were implanted 4-6 cm deeper the plan-

\* Baybyrin, M.

CARD :

1/2

CATEGORY :

ABS. JOUR: Ref Zhur-Biologiya, No. 5, 1959, No. 20168

AUTHOR :

INST. :

TITLE :

ORIG. PUB.:

ABSTRACT : pines survived better. On southern mountain slopes with concavities up to 60° in steepness, terracing was performed. It was found that when pine was mixed with ash, birch and acacia in pure rows it grew better than when in the same mixture with ash and acacia. Larch grew quite successfully in mixture with pure rows of ash, linden and acacia. Satisfactory results were gotten upon planting oak in admixture with ash, elm and acacia. --G.G. Abramashvili

CARD:

2/2

KOZHEVNIKOV, A.D.; PINES, M.I.; FORTUNATOV, V.A.; GONIK, A.A.,  
nauchn. red.; ISAYENKO, Ye.M., red.

[Basic capital assets in lumber floating] Osnovnye fondy  
lesosplava. Moskva, TSentr. nauchno-issl. in-t informa-  
tsii i tekhniko-ekon. issledovaniy po lesnoi, tselliulozno-  
bumazhnoi, derevoobrabatyvaiushchei promyshl. i lesnomu  
khoz., 1964. 16 p. (MIRA 18:3)

1. TSentral'nyy nauchno-issledovatel'skiy institut leso-  
splava (for Kozhevnikov, Pines).



FORTUNATOV, V. I.

USTYUGIN, Ye. I.; ~~BOREYSHOV~~ B. I., redaktor; YEZDOKOVA, M. L., redaktor  
izdatel'stva; BERLOV, A. P., tekhnicheskii redaktor.

[Experience of M. Khakimov's brigade in high-speed mining]  
Opyt raboty brigady M. Khakimova po skorostnoi prokhodke gornykh  
vyrabotok. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po cherno  
i tsvetnoi metallurgii, 1957. 43 p. (MIRA 10:6)  
(Mining engineering)

1ST AND 2ND CODES		PROCESS AND PROPERTIES INDEX		3RD AND 4TH CODES	
FORTUNATOVA, K.R.				7-4	
RC					
<p>Statistics of Black Sea fishes: L. V. ANHOLIN and K. R. FORTUNATOVA (Oomp. and. Acad. Sci. U.S.S.R., 1958, 24, 513-519). The wt. curves and the food consumption and assimilation of various fishes have been determined under aquarium conditions. W. O. K.</p>					
ADD-51A METALLURGICAL LITERATURE CLASSIFICATION					
FROM SYMBOL		TO SYMBOL		FROM SYMBOL	
LONDON 10		LONDON 10		LONDON 10	
M A N O 10		M A N O 10		M A N O 10	

COMMON ELEMENTS

OPEN

MATERIAL INDEX

100 AND 200 ORDERS

PROCESSING AND PROPERTY INDEX

COMPOUND ELEMENTS INDEX

BC
a-4

FORTUNATOVA, K. R.

Summary of ~~Fortunatova, K. R.~~ ~~1955~~ ~~1956~~ ~~1957~~ ~~1958~~ ~~1959~~ ~~1960~~ ~~1961~~ ~~1962~~ ~~1963~~ ~~1964~~ ~~1965~~ ~~1966~~ ~~1967~~ ~~1968~~ ~~1969~~ ~~1970~~ ~~1971~~ ~~1972~~ ~~1973~~ ~~1974~~ ~~1975~~ ~~1976~~ ~~1977~~ ~~1978~~ ~~1979~~ ~~1980~~ ~~1981~~ ~~1982~~ ~~1983~~ ~~1984~~ ~~1985~~ ~~1986~~ ~~1987~~ ~~1988~~ ~~1989~~ ~~1990~~ ~~1991~~ ~~1992~~ ~~1993~~ ~~1994~~ ~~1995~~ ~~1996~~ ~~1997~~ ~~1998~~ ~~1999~~ ~~2000~~ ~~2001~~ ~~2002~~ ~~2003~~ ~~2004~~ ~~2005~~ ~~2006~~ ~~2007~~ ~~2008~~ ~~2009~~ ~~2010~~ ~~2011~~ ~~2012~~ ~~2013~~ ~~2014~~ ~~2015~~ ~~2016~~ ~~2017~~ ~~2018~~ ~~2019~~ ~~2020~~ ~~2021~~ ~~2022~~ ~~2023~~ ~~2024~~ ~~2025~~ ~~2026~~ ~~2027~~ ~~2028~~ ~~2029~~ ~~2030~~ ~~2031~~ ~~2032~~ ~~2033~~ ~~2034~~ ~~2035~~ ~~2036~~ ~~2037~~ ~~2038~~ ~~2039~~ ~~2040~~ ~~2041~~ ~~2042~~ ~~2043~~ ~~2044~~ ~~2045~~ ~~2046~~ ~~2047~~ ~~2048~~ ~~2049~~ ~~2050~~ ~~2051~~ ~~2052~~ ~~2053~~ ~~2054~~ ~~2055~~ ~~2056~~ ~~2057~~ ~~2058~~ ~~2059~~ ~~2060~~ ~~2061~~ ~~2062~~ ~~2063~~ ~~2064~~ ~~2065~~ ~~2066~~ ~~2067~~ ~~2068~~ ~~2069~~ ~~2070~~ ~~2071~~ ~~2072~~ ~~2073~~ ~~2074~~ ~~2075~~ ~~2076~~ ~~2077~~ ~~2078~~ ~~2079~~ ~~2080~~ ~~2081~~ ~~2082~~ ~~2083~~ ~~2084~~ ~~2085~~ ~~2086~~ ~~2087~~ ~~2088~~ ~~2089~~ ~~2090~~ ~~2091~~ ~~2092~~ ~~2093~~ ~~2094~~ ~~2095~~ ~~2096~~ ~~2097~~ ~~2098~~ ~~2099~~ ~~2100~~ ~~2101~~ ~~2102~~ ~~2103~~ ~~2104~~ ~~2105~~ ~~2106~~ ~~2107~~ ~~2108~~ ~~2109~~ ~~2110~~ ~~2111~~ ~~2112~~ ~~2113~~ ~~2114~~ ~~2115~~ ~~2116~~ ~~2117~~ ~~2118~~ ~~2119~~ ~~2120~~ ~~2121~~ ~~2122~~ ~~2123~~ ~~2124~~ ~~2125~~ ~~2126~~ ~~2127~~ ~~2128~~ ~~2129~~ ~~2130~~ ~~2131~~ ~~2132~~ ~~2133~~ ~~2134~~ ~~2135~~ ~~2136~~ ~~2137~~ ~~2138~~ ~~2139~~ ~~2140~~ ~~2141~~ ~~2142~~ ~~2143~~ ~~2144~~ ~~2145~~ ~~2146~~ ~~2147~~ ~~2148~~ ~~2149~~ ~~2150~~ ~~2151~~ ~~2152~~ ~~2153~~ ~~2154~~ ~~2155~~ ~~2156~~ ~~2157~~ ~~2158~~ ~~2159~~ ~~2160~~ ~~2161~~ ~~2162~~ ~~2163~~ ~~2164~~ ~~2165~~ ~~2166~~ ~~2167~~ ~~2168~~ ~~2169~~ ~~2170~~ ~~2171~~ ~~2172~~ ~~2173~~ ~~2174~~ ~~2175~~ ~~2176~~ ~~2177~~ ~~2178~~ ~~2179~~ ~~2180~~ ~~2181~~ ~~2182~~ ~~2183~~ ~~2184~~ ~~2185~~ ~~2186~~ ~~2187~~ ~~2188~~ ~~2189~~ ~~2190~~ ~~2191~~ ~~2192~~ ~~2193~~ ~~2194~~ ~~2195~~ ~~2196~~ ~~2197~~ ~~2198~~ ~~2199~~ ~~2200~~ ~~2201~~ ~~2202~~ ~~2203~~ ~~2204~~ ~~2205~~ ~~2206~~ ~~2207~~ ~~2208~~ ~~2209~~ ~~2210~~ ~~2211~~ ~~2212~~ ~~2213~~ ~~2214~~ ~~2215~~ ~~2216~~ ~~2217~~ ~~2218~~ ~~2219~~ ~~2220~~ ~~2221~~ ~~2222~~ ~~2223~~ ~~2224~~ ~~2225~~ ~~2226~~ ~~2227~~ ~~2228~~ ~~2229~~ ~~2230~~ ~~2231~~ ~~2232~~ ~~2233~~ ~~2234~~ ~~2235~~ ~~2236~~ ~~2237~~ ~~2238~~ ~~2239~~ ~~2240~~ ~~2241~~ ~~2242~~ ~~2243~~ ~~2244~~ ~~2245~~ ~~2246~~ ~~2247~~ ~~2248~~ ~~2249~~ ~~2250~~ ~~2251~~ ~~2252~~ ~~2253~~ ~~2254~~ ~~2255~~ ~~2256~~ ~~2257~~ ~~2258~~ ~~2259~~ ~~2260~~ ~~2261~~ ~~2262~~ ~~2263~~ ~~2264~~ ~~2265~~ ~~2266~~ ~~2267~~ ~~2268~~ ~~2269~~ ~~2270~~ ~~2271~~ ~~2272~~ ~~2273~~ ~~2274~~ ~~2275~~ ~~2276~~ ~~2277~~ ~~2278~~ ~~2279~~ ~~2280~~ ~~2281~~ ~~2282~~ ~~2283~~ ~~2284~~ ~~2285~~ ~~2286~~ ~~2287~~ ~~2288~~ ~~2289~~ ~~2290~~ ~~2291~~ ~~2292~~ ~~2293~~ ~~2294~~ ~~2295~~ ~~2296~~ ~~2297~~ ~~2298~~ ~~2299~~ ~~2300~~ ~~2301~~ ~~2302~~ ~~2303~~ ~~2304~~ ~~2305~~ ~~2306~~ ~~2307~~ ~~2308~~ ~~2309~~ ~~2310~~ ~~2311~~ ~~2312~~ ~~2313~~ ~~2314~~ ~~2315~~ ~~2316~~ ~~2317~~ ~~2318~~ ~~2319~~ ~~2320~~ ~~2321~~ ~~2322~~ ~~2323~~ ~~2324~~ ~~2325~~ ~~2326~~ ~~2327~~ ~~2328~~ ~~2329~~

FORUMATCVA, K.R.

30433

Nyektoryye dannyye po biologii pitaniya khishchnykh ryb v dyel'tye r. Volgi. Zool.  
zhurnal, 1949, vyp. 5, s. 453-60, - Bibliogr: 17 nazv.  
8. Vyetyerinariya

SO: LETOPIS' No. 34

**FORTUNATOVA, K.R.**

Some data on the influence of predators on the numerical composition of fish populations [with summary in English]. Zool. zhur. 36 no.4: 575-586. Ap. '57. (MLBA 10:6)

1. Laboratoriya ikhtiologii Instituta morfologii zhivotnykh Akademii nauk SSSR.  
(Volga Delta--Fishes) (Caspian Sea--Fishes)

FORTUNATOVA, K.R.

Availability of the stickleback as food to predatory fishes in the  
Volga Delta. Zool. zhur. 38 no.11:1689-1701 N '59 (MIRA 13:3)

1. Laboratory of Ichthyology, Institute of Animal Morphology  
Academy of Sciences of the U.S.S.R., Moscow.  
(Volga Delta--Sticklebacks)  
(Fishes--Food)

FORTUNATOVA, K.R.; CHUGUNOVA, N.I.

Preservability of fish tags depending on the behavior and  
life conditions of fishes. Vop. ikht. no.15:91-105 '60.  
(MIRA 13:9)

1. Laboratoriya ikhtiologii Instituta morfologii zhivotnykh  
im. A.N. Severtsova Akademii nauk SSSR.  
(Fish tagging)

FORTUNATOVA, K.R.

Nature of the effect of predatory fishes on the population  
structure of commercial fishes. Trudy sov. Ikht. kom.  
no.13:108-116 '61. (MIRA 14:8)

1. Laboratoriya ikhtiologii Instituta morfologii zhivotnykh  
AN SSSR.

(Fish populations)



FORTUNATOVA, K.R.

Feeding rhythm of *Aspius aspius*(L.) in the Volga Delta. Vop. ekol.  
5:232-233 '62. (MIRA 16:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut morskogo  
rybnogo khozyaystva i okeanografii, Moskva.  
(Volga Delta--Aspius)

FORTUNATOVA, K.R.

Behavior of predatory fishes as related to the ecology of  
feeding organisms; based on examples of catfish and Aspius.  
Trudy Inst. morf. zhiv. no.42:120-131 '62.

(MIRA 17:10)

ZHOGOVA, M.A.; FORTUNATOVA, N.G.

Data for the evaluation of the effectiveness of antiinfluenza vaccination. Zhur.mikrobiol. epid. i immun. 32 no.4:88-92 Ap '61. (MIRA 14:6)

1. Iz kafedry infektsionnykh bolezney Kalinskogo meditsinskogo instituta i 4-y gorodskoy bol'nitsy goroda Kalinina.  
(INFLUENZA)

NIKONOV, V.A. dotsent; KARANDAYEVA, V.M., assistant; FORTUNATOVA, N.G.,  
assis ent

Ways of eradicating diphtheria in Kalinin. Trudy KGMi no.10:52-54  
'63. (MIRA 18:1)

1. Iz kafedry infektsionnykh bolezney (zav. kafedroy dotsent V.A.  
Nikonov), Kalininskogo gorodskogo meditsinskogo instituta i zav.  
Kalininskoy gorodskoy sanitarno-epidemiologicheskoy stantsii  
(glavnyy vrach G.G.Davidenko).

FORNATONAL

AUTHORS: ~~Glinchuk~~, K. D., Miselyuk, Ye. G.,  
Fortunatova, N. H.

57-11-4/33

TITLE: Investigation of Recombination of Current Carriers in Germanium with the Admixture of Iron (Issledovaniye rekombinatsii nositeley toka v germanii s primes'yu zheleza).

PERIODICAL: Zhurnal Tekhn. Fiz., 1957, Vol. 27, Nr 11, pp. 2451-2457 (USSR).

ABSTRACT: The influence of the glowing on the states of the two acceptor levels (see W. E. Tyler and H. H. Woodbury, Phys. Rev., 96, 874, 1954) and the recombination lifetime of the carriers in n-germanium with iron admixture were investigated as well as the capture cross section of the non-equilibrium current carriers in these levels. It is shown that an acceptor level occurring in such a germanium which lies at 0,27 eV of the conductivity zone is eliminated by glowing at  $t = 450 \pm 500^\circ\text{C}$ . This becomes obvious in the first great increase of the lifetime of the non-equilibrium current carriers. It is assumed that the observed glow effect is due to the deactivation of the iron atoms in consequence of the elimination of the latter from the germanium lattice. The capture cross section for holes in the mentioned local level is determined and the value  $S \approx 1.10^{-14} \text{ cm}^2$  obtained.

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There are 1 table, 2 figures, 5 Slavic references.

Investigation of Recombination of Current Carriers  
in Germanium with the Admixture of Iron.

57 -11-4/33

ASSOCIATION. Institute for Physics of the AN of the Ukrainian SSR., Kiyev  
(Institut fiziki AN USSR., Kiyev).

SUBMITTED. April 23, 1957.

AVAILABLE. Library of Congress.

Card 2/2

*Fortunatova, N.N.*

AUTHORS: Glinchuk, K.D., Miselyuk, Ye.G., Fortunatova, N.N. 57-11-31/33

TITLE: Influence of Annealing on Local Levels and the Life time of Non-equilibrium Current Carriers in Germanium with Irons as Impurity. (Vliyaniye otzhiga na lokal'nyye urovni i vremya zhizni neravnovesnykh nositeley toka v germanii s primes'yu zheleza.) **Letter to the Editor**

PERIODICAL: Zhurnal Tekhn. Fiz., 1957, Vol. 27, Nr 11, pp. 2666-2667 (USSR)

ABSTRACT: W.W.Tyler and H.H.Wood-Bury showed that the insertion of iron into germanium leads to the development of two acceptor-levels with great ionisation-energy in the energy structure of the germanium. The existence of these levels highly reduces the recombination-life of the current-carriers in the germanium. Were the influence of the annealing on the condition of these levels and on the recombination-life of the non-real carriers  $\tau$  in the germanium with an addition of iron was investigated. Also the capture cross-sections of the non-real current-carriers were determined. It is shown that during the annealing a de-activation of the admixture-level with an activation energy of 0,20 e.V. took place. Consequently the current-carrier concentration within the area of the admixture conductivity increased at the expense of a supplement of carriers, which before the annealing were situated at the levels developed from iron. Besides, as a consequence of the annealing the recombination time  $\tau$  rose from 2 sec. before the annealing to 60 sec. after the annealing. In some cases even up to a hundred times and more. For the trap cross-

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Influence of Annealing on Local Levels and the Life Time of Non- 57-11-31/33  
equilibrium Current Carriers in Germanium with Irons as Impurity.

sections of the holes at the acceptor-levels of 0,27 eV of the  
conductivity area bottom and of 0,34 eV of the valent zone the  
values  $S_p \approx 1,0 \cdot 10^{-14}$  qcm and  $S_p \approx 3,0 \times 10^{-15}$  qcm respectively were  
found according to W.Shockley and W.Read.

There are 1 figure and 2 Slavic references.

ASSOCIATION: Institute for Physics of the AN of the Ukrainian SSR, Kiyev (Institut  
fiziki AN USSR, Kiyev)

SUBMITTED: January 26, 1957

AVAILABLE: Library of Congress

Card 2/2



AUTHORS: Glinchuk, K. D., Miselyuk, Ye. G., 57-28-5-24/36  
Fortunatova, N. N.

TITLE: Influence of Annealing on the Local Levels and the Life of  
 Current Carriers Not in Equilibrium in p-Type Germanium With  
 Iron Impurities (Vliyaniye otzhiga na lokal'nyye urovni i  
 vremya zhizni neravnovesnykh nositeley toka v germanii p-tipa  
 s primes'yu zheleza)

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1958, Vol. 28, Nr 5,  
 pp. 1053-1053 (USSR)

ABSTRACT: In the previous paper (Ref 1) the recombination of the current  
 carriers in p-type germanium with iron impurities was investi-  
 gated. In this letter to the editor the authors communicate the  
 results of similar investigations. A figure shows the curves re-  
 presenting the temperature dependence of the Hall constant  
 in  $R = \rho/(1/T)$  for one of the samples of p-type germanium. As can  
 be seen from the figure, the level is situated at 0,33 eV from  
 the valence zone. It can also be seen that this level is removed  
 by the annealing. This becomes manifest by the modification of  
 the kind and the magnitude of conductivity as well as in a marked  
 increase of the life  $\tau$  in the sample. This modification of the  
 kind and the magnitude of conductivity due to annealing is ex-

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Influence of Annealing on the Local Levels and the Life 57-28-5-24/36  
of Current Carriers Not in Equilibrium in p-Type Germanium With Iron Impuri-  
ties

plained by the fact that the electrons, which previous to the annealing partly fill up the local level 0,33eV ( at  $T \approx 0^\circ\text{K}$ ), passed into the conduction zone after annealing. The increase of  $\tau$  is also explained by the dislocation of the level during annealing. As a conclusion it may be mentioned that values of  $\tau_e = 1 \div 20$  microseconds at  $\rho = 1 \div 50$  ohm.cm were observed in monocrystalline germanium samples of the p-type with iron impurities. The minimum  $\tau_e$ , which could be observed in such a germanium, had the value  $\approx 0.15$  microseconds at  $\rho = 4$  Ohm.cm. The authors express their gratitude to V.Ye. Lashkarev, Member, AS, UkrSSR and K.B. Tolpygo for suggestions. There are 1 figure and 1 Soviet reference.

ASSOCIATION: Institut fiziki AN USSR, Kiyev (Kiyev Physics Institute, AS UkrSSR)

SUBMITTED: July 4, 1958

1. Germanium crystals--Properties

Card 2/2

67385

24.7700

24(6)

SOV/181-1-9-3/31

AUTHORS:

Glinchuk, K. D., Miselyuk, Ye. G., Fortunatova, N. N.

TITLE:

Investigation of the State of Local Silver and Gold Levels  
in Germanium ✓

PERIODICAL:

Fizika tverdogo tela, 1959, Vol 1, Nr 9, pp 1345 - 1350 (USSR)

ABSTRACT:

The present paper investigates the influence exerted by medium-temperature annealing ( $T = 400 - 600^{\circ}\text{C}$ ) on the state of local gold and silver levels in germanium. As already shown by other authors (Refs 1-8), Cu, Fe, Co, and Ni in germanium can be deactivated by medium-temperature annealing, i.e. these impurities pass over from an "active" to a "passive" state. The aim of the present paper was to investigate this phenomenon more closely. Also the temperature dependence of the carrier concentration and of the lifetime of the minority carriers  $\tau$  was measured. The method of preparing the samples and of conducting the investigation is described in references 2 and 15. The paper consists of two parts: the first deals with the influence of annealing on the state of the acceptor levels of silver in germanium, and the second on those of gold in germanium. Figure 1 shows the temperature

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... annealing took place at

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Investigation of the State of Local Silver and Gold  
Levels in Germanium

SOV/181-1-9-3/31

500° during 48 hours, and the course of the curves was found to be practically independent of the annealing process. Nor did an annealing carried out at 600° during 72 hours effect any change therein. Curve 2 shows  $\tau$  (T) for p-type germanium ( $\rho = 20 \text{ ohm/cm}$ ) again before and after annealing. Here again, no influence of annealing is noticed. Finally, the authors thank V. Ye. Lashkarev, Academician of the AS UkrSSR for his advice, A. N. Kvasnitskaya for preparing the samples, and N. M. Tkach for his aid in the measurements. There are 3 figures and 21 references, 7 of which are Soviet.

ASSOCIATION: Institut fiziki AN USSR Kiyev (Physics Institute of the  
AS UkrSSR Kiyev) 14

SUBMITTED: January 9, 1959

Card 3/3

VASILEVSKAYA, V. N.; MISELYUK, Ye. G.; FORTUNATOVA, N. N.

Structure and some electric characteristics of germanium  
dendrites. Fiz. tver. tela 5 no.1:52-60 Ja '63.  
(MIRA 16:1)

1. Institut poluprovodnikov AN UkrSSR, Kiev.

(Germanium crystals—Electric properties)

GLINCHUK, K.D. [Hlynchuk, K.D.]; MISELYUK, Ye.G. [Miseliuk, O.H.];  
FORTUNATOVA, N.N. [Fortunatova, N.M.]

Recombination of charge carriers in germanium doped with some  
impurities. Ukr. fiz. zhur. 4 no.2:207-218 Mr-Apr '59.  
(MIRA 13:1)

1. Institut fiziki AN USSR.  
(Germanium)

11/19/66

S/181/63/005/001/008/064  
B102/B186

AUTHORS: Vasilevskaya, V. N., Miselyuk, Ye. G., and Fortunatova, N.N.

TITLE: Investigation of the structure and some energy characteristics of germanium dendrites

PERIODICAL: Fizika tverdogo tela, v. 5, no. 1, 1963, 52-60

TEXT: Dendrites of pure germanium and of germanium doped with Sb, Au or Ga, were grown from a supercooled melt. They were 200-800 $\mu$  thick and at most 150 mm high. Dendrites less than 400 $\mu$  thick exhibited one twin plane, and thicker samples more than one. In the first case, with an even number of twin planes, the main faces were (111) and ( $\bar{1}\bar{1}\bar{1}$ ), i.e. dissimilar; in the second case, these faces were also dissimilar for an even number of twin planes, whereas for an odd number of twin planes, they were similar, being either both (111) on the C side or both ( $\bar{1}\bar{1}\bar{1}$ ) on the IC side, where C and IC stand for "complete" and "incomplete". The dislocation distribution was investigated in the longitudinal and transverse directions. The density of the dislocations proved to be greater in the direction of growth and smaller on the edges; it was several times smaller on the C

Card 1/3 11/19/66 S/181/63/005/001/008/064

Investigation of the structure ...

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B102/B186

side than on the IC side. Star-shaped accumulations of dislocations were found in dendrites thicker than  $350\mu$ . Dendrite faces exhibiting equal regularity also have comparable dislocation densities. Impurities in concentrations below the limit of solubility did not affect the dislocation density. The resistivity  $\rho$  and the carrier lifetime  $\tau$  of the dendrites were also measured.  $\rho$  proved to be practically constant when measured along the dendrites but showed 1 or 2 maxima in the transverse direction. On comparing  $\rho(d)$  with the dislocation density  $N_d(d)$  the curves are seen to be mirror images: in the middle of the crystal,  $N_d$  has a broad maximum and  $\rho$  has a broad minimum. The minimum corresponds to the twin region;  $\rho$  increases rapidly and by a large amount towards the C side, but only a little towards the IC side.  $\rho$  is higher on the C side than the value of  $\rho$  for the unpolished material, but lower on the IC side. Whereas  $\rho$  on the C side differs little from the value for the original matter,  $\tau$  is always smaller. The IC side value of  $\tau$  was more than one order larger than the C side value in alloy crystals, but less than one order larger in pure germanium crystals. The C side values of  $\tau$  were about equal to the value  $\tau_{eff}$ . There are 9 figures and 3 tables.

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Investigation of the structure ...

S/181/63/005/001/008/064  
B102/B186

ASSOCIATION: Institut poluprovodnikov AN USSR, Kiyev (Institute of  
Semiconductors AS UkrSSR, Kiyev)

SUBMITTED: July 16, 1962

Card 3/3

FORTUNIK, Frantisek

Mechanization of harvesting grain maize as well as the processing  
after its gathering. Jarmu mezo gep 10 no.2:63-66 F '63.

1. VUPT, Rovince u Bratislavy.

FORTUNIK, F., Inz.

Basic problems of complex mechanization of maize grain cultivation and harvesting. Zemedel tech 9 no.3:201-206 Je '63.

1. Vyzkumny ustav zemedelske techniky, Rapy u Prahy.

STANEX, Jaroslav, inz.; FORTUNIK, Frantisek, inz.

Conference on mechanization of Indian corn growing and  
harvesting in Budapest. Vest ust zemedel ll no. 5:187-191  
'64.

1. Ministry of Agriculture, Forestry and Water Resources  
Management, Prague (for Stanek). 2. Research Institute of  
Agricultural Technology, Rovinka (for Fortunik).

FORTUNIN, I.

More independent action by primary trade-union organisations. Sov.  
profsoiuzy 5 no.4:25-26 Ap '57. (MLRA 10:6)

1. Predsedatel' Tsentral'nogo komiteta profsoyusa rabochikh mestnoy  
promyshlennosti.

(Trade unions)

FORTUNKA, Florian

high-vacuum induction furnace for melting and casting of metals.  
Przegl elektroniki 3 no.8:457-458 Ag '62.

1. Przemyslowy Instytut Elektroniki, Warszawa.

FORDHAM, P.F.

Highly characteristics of the steering of the "Volga"  
automobile. Avt. prom. 31 no.1:21 Ja '64.

(MIRA 18:4)

1. Gor'kovskiy avtozavod.

FORTUNKOV, D.F.

Effect of disalignment on the vibrations of flexible wheels of a motor vehicle. Avt.prom. 31 no.7:9-11 J1 '65.

(MIRA 18:8)

1. Gor'kovskiy avtozavod.



ACC NR: AP6019757

(A)

SOURCE CODE: UR/0113/66/000/006/0013/0015

AUTHOR: Fortunkov, D. P.

ORG: Gor'kiy Automobile Plant (Gorkovskiy avtozavod)

TITLE: Study of the vibration of automobile drive wheels with variable radius

SOURCE: Avtomobil'naya promyshlennost', no. 6, 1966, 13-15

TOPIC TAGS: motor vehicle, mechanical vibration, vibration analysis, vibration effect, vibration stress, *vehicle component*

ABSTRACT: Vibrations in the king-pins of automobile driving wheels are produced by the changing radius due to wheel rotation in addition to gyroscopic moment. The author examines the forces acting on the drive wheels of cars and trucks and concludes that the varying radius due to the rotation of wheels takes energy from the vehicle's engine and directs it to the vibrating system, e.g., the steering gear, drive wheels, or the front suspension). If there is more power transferred to the vibration system than the internal resistance of this system, then the vibrations do not subside and the motion of the automobile becomes unstable. Forces and moments generated with the variation in the wheel's radius place stress on the parts of the automobile and thus reduce their life. The horizontal vibrations of drive wheels also produce worn spots in the tires. Orig. art. has: 2 figures, 1 table, and 8 formulas. [SA]

SUB CODE: 13/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 001

Card 1/1

UDC: 629.11.011.3:62-752

FORTUNOV, Konstantin

Road of their success in the field of rationalization.  
Ratsionalizatsiia 13 no.5:8-11 '63.

FORTUNOV, Konstantin

Some of our inventors. Ratsionalizatsiia 13 no.8:10-12 '63.

FORTUNOVA, Vera Nikolayevna; SPIRIDONOVA, O.M., kandidat tekhnicheskikh nauk, nauchnyy redaktor; ROTENBERG, A.S., redaktor izdatel'stva; PUL'KINA, Ye.A. tekhnicheskiiy redaktor

[Preparation and assembly of glazed and painted window and door frames] Izgotovlenie i montazh okrashennykh i osteklennykh okonnykh i dvernykh blokov. Leningrad, Gos. izd-vo lit-ry po stroit. i arkhitekt., 1956. 25 p. (MLRA 10:5)

(Doors) (Windows)

POLAND

FORTUNSKA, Halina

Enterprise for Geophysical Explorations (Przedsiębiorstwo  
Poszukiwań Geofizycznych)

Warsaw, Przegląd geologiczny, No 3, Mar 1966, pages 120-124

"Outline of method for colorimetric determination of heavy  
metals in soil samples."

FORTUS, B.G.

Psoriasis following strong psychical experience. Sov.med. 20 no.5:  
77-78 My '56. (MLBA 9:9)

1. Iz polikliniki Ministerstva vysshego obrazovaniya SSSR (glavnyy  
vrach G.A.Klang)  
(PSORIASIS, psychology,  
psychosomatic etiol. (Rus))

FORTUS, Mariya

Her call signal was "Al'ba Regia." Radio no.9:5-6 S '62.  
(MIRA 15:9)

(Radio, Military) (Radio operators)

FORTUS, M.

SOV/52-2-4-7/7

A Summary of Papers Presented at the Sessions of the Scientific Research Seminar on the Theory of Probabilities. Moscow, Feb-May 1957. Teoriya Veroyatnostey i yeye Primeneniya, 1957, v. 2, no. 4, pp. 478-88.

Feller processes and non-degenerative parabolic equations. Contents are to be published in this journal. Ososkov, G.A., A limit theorem for flows with a restricted dependence. The contents were published in Vol.1, Nr.2 of this journal. Shirayev, A.N., A central limit theorem for multiply non-homogeneous Markov chains. Two limit theorems are proved for the normalised sum of stochastic quantities connected in a multiply non-homogeneous chain of order  $\mu$ . Fortus, M., A uniform limit theorem for distributions approaching a stable law with an index less than one. The sums of independent stochastic quantities are distributed according to the law  $F(x)$ . The function  $F(x)$  belongs to the domain of normal attraction (prityazheniye) of a stable law  $F_{\alpha\beta}(x)$  ( $\alpha$  and  $\beta$  are parameters of the distribution) and  $\alpha < 1$ .

$$F_n(x) = P \left\{ \frac{S_n}{n^{1/\alpha}} < x \right\},$$

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A Summary of Papers Presented at the Sessions of the Scientific Research Seminar on the Theory of Probabilities.

where  $S_n$  is the sum of  $n$  independent random quantities distributed according to the law  $F(x)$ . Various relations between  $F(x)$  and  $F_{\alpha, \beta}(x)$  and between  $F_n(x)$  and  $F_{\alpha, \beta}(x)$  are discussed. Blagoveshchenskiy, Yu., On ergodicity for schemes of series. The following theorem is proved. In order that a homogeneous scheme of series be ergodic it is necessary and sufficient that as  $n \rightarrow \infty$   $\beta(P_n)m(n) \rightarrow \infty$  where  $\beta(P_n) = 1 - \gamma(P_n)$ , and  $\gamma(P_n) = 1$  if  $k_0 > 1$ , or  $\max |\lambda_i|$ , if  $k_0 = 1$  where

$$P_n(\lambda) = (\lambda - 1)^{k_0} (\lambda - \lambda_1)^{k_1} \dots (\lambda - \lambda_r)^{k_r}$$

is the characteristic polynomial of the matrix  $P_n$ .

Card ~~10~~ 11  $m(n)$  are moments of time and  $m(n) \rightarrow \infty$  as  $n \rightarrow \infty$ .

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FORTUS, M.I.

Problem of practical statistical extrapolation of meteorological fields.  
Izv. AN SSSR. Ser. geofiz. no.6:795-803 Je '62. (MIRA 15:6)

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(Statistical weather forecasting)

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C111/C444

AUTHOR: Fortus, M. I.

TITLE: Formulas for extrapolation of random fields

PERIODICAL: Teoriya veroyatnostey i yeye primeneniye, v. 7, no. 1, 1962, 105-113

TEXT: A random field  $\xi(x)$ ,  $x = (x_1, \dots, x_n) \in R_n$  is called a field with homogeneous first increments  $\Delta_y \xi(x) = \xi(x) - \xi(x-y)$ , if there exist the mathematical expectation  $M \Delta_y \xi(x_1) = m_y$  and the structure function  $D_{y,z}(x) = M \Delta_y \xi(x_1) \Delta_z \xi(x_1+x)$ , independent from  $x_1$ . The author sets  $m_y = 0$  and considers the  $\Delta_y \xi(x)$  as elements of the Hilbert space  $H$  with the scalar product  $(\xi, \eta) = M \xi \eta$ . By  $H(x_n)$  one denotes the linear closure of the set of the quantities  $\Delta_y \xi(z) = \Delta_{y^{(n-1)}, y_n} \xi(z^{(n-1)}, z_n)$  where  $z^{(n-1)} = (z_1, \dots, z_{n-1}) \in R_{n-1}$  and  $z_n \leq x_n$ ;  $y_1 \geq 0, \dots, y_n \geq 0$ . The field is called regular with respect to  $x_n$ , if  $\bigcap_{x_n} H(x_n) = 0$ .

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Formulas for extrapolation of . . .

Considered is the linear extrapolation of regular fields. As the best linear prognosis of the increments

$\Delta_y \xi(x^{(n-1)}, x_n + s_n)$  of such a field for the "time"  $s_n$  one denotes the vector  $\tilde{\Delta}_y^{s_n} \xi(x^{(n-1)}, x_n + s_n)$  of  $H$  which is the projection of

$\Delta_y \xi(x^{(n-1)}, x_n + s_n)$  on  $H(x_n)$ .

Proved is

theorem 2: For a regular random field with homogeneous increments the best linear prognosis for the "time"  $s_n$  forward has the shape:

$$\begin{aligned} \tilde{\Delta}_{s_0, \dots, s_{n-1}}^{s_n} \xi(x^{(n-1)}, x_n + s_n) = & \int_{P_{n-1}} e^{i\lambda^{(n-1)}_n (n-1)} \int_{-\infty}^{\infty} e^{i\lambda_n x_n} \psi_{s_n, \lambda_n}(\lambda^{(n-1)}, \lambda_n) Z(d\lambda) + \\ & + \int_{-\infty}^{\infty} e^{i\lambda_n x_n} \psi_{s_n, \lambda_n}(0, \dots, \lambda_n) Z(0, \dots, 0, d\lambda_n). \end{aligned} \quad (4)$$

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